

Psychometrics of Arabic Version of the UWES-9

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ABSTRACT

This paper examines the descriptive results of work engagement construct among Public school's female teachers in Saudi Arabia. The current research collected data from respondents using survey from female teachers in Saudi Arabia (n= 414). The results showed high internal consistency (Cronbach's Alpha= .85). The composite reliability ranging from 0.87 to 0.92 for all constructs, and 0.91 for work engagement. Keywords: work engagement, teachers. Arabic

1. INTRODUCTION

Work engagement is associated with positive attitude towards organization and work, also it has been confirmed that it has a positive relation with mental and psychological health and efficacy beliefs (Schaufeli & Salanova 2008). Kahn (1990) was the first researcher who defined work engagement. Kahn defined personal engagement for an employee as connecting himself to the work roles. When an individual is engaged in his or her work, he or she shows a physical, cognitive and emotional attachment in the job performance. Rich, Lepine, and Crawford (2010) see engagement as the active, full performance of a person, involving his or her cognitive, emotional, and physical energies. Schaufeli, Leiter, and Taris (2008) and Hirschi (2012) describe such commitment as "a positive work-related state of fulfilment" (Hirschi, 2012). Work engagement described as a positive, fulfilling, work-related state of mind that is illustrated by vigor, dedication, and absorption. Vigor is described as great levels of energy and intellectual flexibility through the work, the readiness to endow effort in the work, and determination even in tough situations. While dedication means an individual is strongly embroiled in his/ her work, and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Lastly, the definition of absorption is when an individual is fully focused and happily immersed in his/ her work, whereby time passes quickly and one has difficulties with detaching oneself from work (Schaufeli, Salanova, González-Romá, & Bakker, 2002)..

2. TEACHERS IN SAUDI ARABIA

Research on Saudi female is rare and often lacks thorough explanation (Arebi, 1994). The reason could be females are also regarded as objects of family honor and hence protecting them from the public eye is not limited to physical concealment, but also includes protecting the revelation of their identities and voices (Arebi, 1994). However, a notable feature of female participation in the labor market in Saudi Arabia is the concentration of females in the education sector, wherein 77.6% of total working women pursue their careers, as do 84.8% of those holding bachelor degrees (Saudi Arabia Ninth Development Plan, 2010). Majority of Saudi females work as teachers, 91% of those teachers are in general public schools (Saudi Arabia ministry of Education, 2013); therefore this study focused on female teachers in general public schools. This study aims to assess the validity and reliability of the Arabic version of the 9-item Utrecht Work Engagement Scale (UWES). First, testing the internal consistency of the UWES-9 and then, testing data normality by using Skewness and Kurtosis test. Third, descriptive statistics are tested using covariance matrix method. Also this study aims to assess work engagement among female teachers in public schools in Saudi Arabia, precisely, Jeddah, Riyadh and Dammam.

3. MEASURES

The main construct measures were based on existing instruments. Table 3 summarizes the measurement items of work engagement. Work engagement was evaluated using UWES-9 to analyse the level of engagement of the employees (Schaufeli, Salanova, & Bakker, 2006). They suggested UWES, a nine-item scale, as it asks participants to rate statements about themselves on a 7-point Likert scale, ranging from (1) 'Strongly Disagree' to (7) 'Strongly Agree'. The intention of the scale is to measure the three dimensions of work engagement as defined by Schaufeli, Salanova, Gonzalez-Roma & Bakker, (2002): vigor, absorption, and dedication. Each has three items. Schaufeli, Salanova and Bakker (2006) found the internal consistencies (Cronbach's alpha) of UWES-9 differ between 0.81 to 0.85 for vigor, 0.83 to 0.87 for dedication, and 0.75 to 0.83 for absorption. However, many studies (Schaufeli, Tolvanen, Kinnunen, Hakanen, Feldt, Mauno & Seppälä, 2009; Schaufeli et al., 2006) recommend the use of the 9-item version which is the

short version of the scale. It is preferable to reduce the likelihood of attrition, a scale measuring a particular construct should have as few items as possible while remaining reliable and valid.

TABLE 1: The 9-Item Utrecht Work Engagement Scale (UWES)

No	Statement	Source
1.	At their work, teachers feel bursting with energy (VII)	(Schaufeli, Salanova, & Bakker, 2006).
2.	At their work, teachers feel strong and vigorous (VI2)	
3.	When the teachers get up in the morning, they feel like going to work (VI3)	
4.	Teachers enthusiastic about their work (DE1)	
5.	The work inspires the teachers (DE2)	
6.	teachers are proud on the work that they do (DE3)	
7.	Teachers feel happy when they are working intensely (AB3)	
8.	Teachers are immersed in their work (AB2)	
9.	Teachers get carried away when they are working (AB3)	

VI= vigor; DE= dedication; AB= absorption

4. Participants

Respondents were taken from 414 Saudi female teachers in public schools in Riyadh, Jeddah and Dammam. Respondents were selected by stratified random sampling. The City employed to stratify the teachers into three stratum. Then simple random sampling was used in the selection of the teachers. 200 names were selected out of 19,519 in Jeddah, 300 out of 34,300 in Riyadh, and 200 out of 17,801 in Dammam. Hence, a total of 700 questionnaires were distributed in three cities (Jeddah, Riyadh and Dammam).

Table 2: Sample Size

City	Number of teachers			Percentage	Number of questionnaires distributed
Jeddah	19,519	$19,519/71,620 \times 100 = 27.3$	$382 \times 27.3 = 103$	144	200
Riyadh	34,300	$34,300/71,620 \times 100 = 47.9\%$	$382 \times 47.9 = 183$	256	300
Dammam	17,801	$17,801/71,620 \times 100 = 24.9\%$	$382 \times 24.9 = 95$	133	200
Total	17,801	100%	382	533	700

The questionnaires were distributed to the school through research assistants. An official letter from the Ministry of Education was obtained to aid the researchers in the collection of the data. The researchers were first briefed on how administrate the questionnaire so that the research assistants could then brief the teachers. The teachers were given two weeks to complete the questionnaires. However, there were several cases where the questionnaires were not returned. Thus, from 700 questionnaires, only 414 (59 %) questionnaires were returned. As for Jeddah out of 200 questionnaire 195 (97.5%) were returned. while Dammam only 125 (62%) were received out of 200 questionnaires. 94 (31%) questionnaires were also received from Riyadh. This figure (414) however exceeded the required sample size of The total number of respondents was 414 Saudi female teachers from the three main cities in Saudi Arabia- Jeddah, Riyadh and Dammam. The teachers have a wide range of experience. 115 (27.8%) teachers have 1-5 years of experience. While 80 (19.3%) teachers have 6- 10 years of experience and 81 (19.6%) have 11-15 years of experience. 75 teachers (18.1%) have 16-20 years of experience and only 63 teachers (15.2%) have more than 21 years of experience. In terms of regional area, Jeddah had the highest numbers of respondents, 195 (47.1%). Dammam had 125 (30.2%) respondents, while Riyadh had the least number of respondents only 94 (22.7%). From a total of 414 respondents, 261 were aged between 30 and 39. This group of respondents made up 63.1% of the sample. 140 were aged above 40 and this made up 33.8%. Finally only 13 aged between 20 to 29 and this was 3.1%. In terms of education, majority 320 teachers (77.3%) possessed a Bachelor’s degree. Whilst 85 teachers (20.5%) had diploma and 2.1 percent had masters or PhD. Those 68.6 % of the 414 female teachers are working in primary schools. Whilst 31.4% are working in the intermediate and secondary schools. With regard to the monthly household income, a total of 238 respondents (57.5 %)

earned between SAR*7000 and SAR 11.999 per month, followed by 156 respondents (37.7%) earned between SAR12.000 and SAR 16.999. There was only 20 respondents (4.8%) earning more than SAR 17000. Majority of the teachers are married 377 only 37 are single. SAR= Saudi Ryial 3.75= 1 USD .

5. Data Analysis

Data screening is necessary in ensuring that data were correctly entered, free from missing values, outliers and to confirm that the distribution of variables are normal. Missing data happens when respondents failed to answer one or more items in the survey. To ensure that the data were free from missing values, frequency and missing value analysis were conducted for each measurement item. The screening results of the data showed that there was a minimal amount of missing data which was replaced by using the variable median responses for each measurement item. Outliers refer to the observations that have an unusual value for a single variable (Tabachnick & Fidell, 2013). For univariate detection, besides examining histograms and box-plots, each variable was examined for the standardised (z) score (Tabachnick & Fidell, 2013. Following Hair et al. (2006), a case is an outlier if its standard score is ± 4.0 or beyond. Therefore any Z-score greater than 4 or less than -4 is considered to be an outlier. The results indicated that the standardised (z) scores of 5 cases (i.e., 356, 448, 475, 355, 354) were beyond ± 4 for some items. Thus these 5 cases were considered as outliers and hereby deleted from the analysis. Therefore the sample size dropped from 419 to 414. The standardised (z) scores of the remaining cases are summarized in Table for the items in each construct.

Table 3: Results of Univariate Outlier Based on Standardized Values

<i>Construct</i>	<i>Item</i>	Standardized value (Z-Score)	
		Lower Bound	Upper Bound
<i>Vigor (VIG)</i>	VIG1	-2.949	1.037
	VIG2	-2.959	1.049
	VIG3	-2.030	1.221
<i>Dedication (DED)</i>	DED1	-2.631	1.041
	DED2	-2.497	1.120
	DED3	-3.089	0.723
<i>Absorption(ABS)</i>	ABS1	-2.769	0.919
	ABS2	-3.165	1.069
	ABS3	-2.971	1.131

As shown in the above table (table 3) the results indicated that the standardised (z) scores of the cases ranged from -3.165 to 1.221 indicating that none of the items exceeded the threshold of ± 4 . Thus there is no any uni-variate outlier among the 414 remaining cases.

5.1 Data Normality

The normality test was conducted to determine whether the data of a variable is distributed in a normal curve. Non-normal distributed data would show a highly skewed either to the left or to the right. These values are called kurtotic variables (Brown, 2012) and they can distort relationships and significance tests. In this study, skewness and kurtosis were employed to assess normality of the data. In order to confirm the univariate normality, skewness and kurtosis values smaller than an absolute values of 2 and 7 respectively, were taken as demonstrating sufficient normality in this study (Ho, 2006; Olsson, Foss, Troye, & Howell, 2000; Oppenheim, 1966). Following this suggestion, the data appears to show sufficient normality. Table 3 gives a summary of the skewness and kurtosis values for all items.

Table 4 Assessment of Normality of All Items

<i>Construct</i>	<i>Item</i>	<i>Skewness</i>	<i>Std. Error of Skewness</i>	<i>Kurtosis</i>	<i>Std. Error of Kurtosis</i>
<i>Vigor (VIG)</i>	VIG1	-1.195	0.12	0.941	0.239
	VIG2	-1.091	0.12	0.715	0.239
	VIG3	-0.66	0.12	-0.622	0.239
<i>Dedication (DED)</i>	DED1	-0.884	0.12	-0.072	0.239
	DED2	-0.724	0.12	-0.37	0.239
	DED3	-1.445	0.12	1.248	0.239
<i>Absorption(ABS)</i>	ABS1	-0.993	0.12	0.087	0.239

	ABS2	-1.081	0.12	0.773	0.239
	ABS3	-1.062	0.12	0.815	0.239

The results indicated that the skew and kurtosis of all 9 items were between ± 2 and ± 7 respectively. Therefore, it can be concluded that the data set of all items were well-modelled by a normal distribution. As shown in, table 4 the skew ranged from -1.445 to 0.07 and the kurtosis ranged from -1.563 to 1.248

5.2 Descriptive Analysis

In this analysis, covariance matrix method was used to calculate the descriptive function so that all of the variables could be included in the analysis. The composite scores of the variables were computed by parcelling the original measurement item scores. Parcels are sum or averages of several individual indicators or items based on their factor loadings on the construct (Coffman & Maccallum, 2005; Hair et al., 2006). Table 5 displays the means and standard deviation of the constructs, assessed on a 7-point Likert scale:

Table 5 Results of Descriptive Statistics for Constructs

Constructs	Mean	Standard Deviation
• Vigor (VIG)	5.21	1.34
• Dedication (DED)	5.43	1.44
• Absorption (ABS)	5.44	1.34

The mean was applied as a measure of central tendency, which indicated that the mean values of all constructs were above their midpoint level (4) as indicated in table 5. The phenomenon indicated that the consensus respondents' perception toward these constructs were above the average. The highest mean rating belonged to Absorption (ABS) with the mean value of 5.44. The lowest mean rating belonged to Resiliency (RES) with the mean value of 5.05. The standard deviation was applied as a dispersion index to indicate the degree to which individuals within each variable differ from the variable mean. Among the studied variables, the individual value of Dedication (DED) deviated the most from its mean (SD = 1.44). This standard deviation suggested reasonably high variability in respondents' perception towards Individualized Dedication (DED). Reliability is assessed using average variance extracted (AVE), construct reliability (CR) and Cronbach's alpha. Table 5 shows that the AVE, which reflects the overall amount of variance in the indicators accounted for by the latent construct, was above the cut-off 0.5 for all constructs as suggested by Hair et al. (2006), ranged from 0.69 to 0.79. The composite reliability values, which depict the degree to which the construct indicators indicate the latent construct, exceeded the recommended value of 0.6 for all constructs as recommended by Bagozzi and Yi (1988), ranging from 0.87 to 0.92. The Cronbach's Alpha values, which describe the degree to which a measure is error-free, range from 0.78 to 0.87 which were above the threshold of 0.7 as suggested by Nunnally and Bernstein (1994). Therefore, the achieved Cronbach's Alpha for all constructs was considered as sufficiently error-free.

Table 6: Results of Convergent Validity for Measurement Model

Construct	Factor Loading	(AVE) ^a	(CR) ^b	Cronbach Alpha
VIG1	0.826	0.693	0.871	0.778
VIG2	0.871			
VIG3	0.799			
DED1	0.929	0.787	0.917	0.864
DED2	0.847			
DED3	0.884			
ABS1	0.895	0.793	0.920	0.869
ABS2	0.886			
ABS3	0.890			
Work Engagement (WE)		0.770	0.910	0.851

^a: Average Variance Extracted = (summation of the square of the factor loadings)/{(summation of the square of the factor loadings) + (summation of the error variances)}.

^b: Composite reliability = (square of the summation of the factor loadings)/{(square of the summation of the factor loadings) + (square of the summation of the error variances)}.

6. Discussion

With data collected from a sample of female teachers of public schools, the current study presents evidence for the reliability and validity of the Arabic version of the UWES-9. Similar to previous findings of the original Dutch version of UWES (Schaufeli & Bakker, 2003), it was found that the UWES-9 displays an outstanding internal consistency reliability, well above the suggested threshold of 0.70 (Nunnally & Bernstein, 1994). This proposes that work engagement could be considered as a three dimensional as well as a one dimensional construct as recommended by Schaufeli et al (2006).

To overcome the problem of multicollinearity which may occur between the three factors if they entered in the regression analysis at the same time; Schaufeli et al. (2006) recommend researchers to use the total score as an overall indicator of work engagement rather than using the scores of the three factors as indicators of the latent engagement construct in structural equation modeling. Work engagement has been measured by UWES widely. The Arabic version of this measure has not been examined thoroughly yet. Thus there is a need to uncover this version's applicability in Saudi Arabia context. This study seeks to validate the UWES-9 by assessing the psychometric properties in a sample of female teachers in Saudi Arabia. In general, the UWES-9 showed satisfactory levels of psychometric properties. These results suggest that the Arabic version of UWES-9 is a reliable measurement scale of work engagement in Saudi Arabia context. Still, the underlying dimensionality of the UWES-9 remains to be clarified in future research with different antecedents and consequences. This study has limitations. First, the study sample was established on a single-sex organization of girls public schools which is strictly comprised of female teachers only. The present study findings may not be generalized to boys' schools' teachers which have male teachers only. Secondly, this study focused on UWES-9 version, as such future research in Arabic version may use UWES-17 long version to be able to compare between the validity of both versions.

In summary, this study delivered supportive evidence for the use of the shortened work engagement scale UWES-9 in the Arabic version. The validation of the UWES-9 will support a better understanding of work engagement in Saudi Arabia context.

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